

Serial No. 10/726,963

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CLAIM AMENDMENTS

1. (Currently Amended) A prosthesis comprising a plurality of self expanding stents linked together by links and defining an elongate substantially cylindrical lumen wall engaging surface and at least one of the stents having a bio-compatible graft material cover thereby defining a covered stent portion and an uncovered stent portion.

2. (Currently Amended) A prosthesis as in Claim 1 wherein the cover encompasses at least two of the plurality of stents and the cover is stitched or otherwise fastened to the stents in the covered stent portion.

3. (Currently Amended) A prosthesis as in Claim 1 wherein the covered stent portion of the prosthesis is at the proximal end of the plurality of stents.

4. (Currently Amended) A prosthesis as in Claim 1 wherein the uncovered stent portion [stents] extends away from the covered portion and the stents of the uncovered stent portion are linked by flexible links.

5. (Currently Amended) A prosthesis as in Claim 1 wherein the uncovered stent portion extends away from the covered stent portion and the stents of the uncovered stent portion are linked by a thread or fibre [such as a suture] threaded through [the] bends of the [zig-zag] stents.

6. (Currently Amended) A prosthesis as in Claim 5 wherein the thread or fibre [such as a suture] is connected to each bend by a knot selected from a half hitch, a thumb knot, two half hitches or a clove hitch.

7. (Currently Amended) A prosthesis as in Claim 1 wherein a proximal end of the covered portion of the prosthesis includes barbs extending from a

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stent of the plurality of stents through the cover to engage with the wall of the lumen when deployed.

8. (Currently Amended) A prosthesis as in Claim 1 wherein there are at least three covered stents of the plurality of stents in the covered stent portion each of the stents being of the zig-zag type and constructed from stainless steel or Nitinol and up to eight or ten uncovered stents of the plurality of stents in the uncovered stent portion formed from stainless steel or Nitinol.

9. (Original) A prosthesis as in Claim 1 wherein the uncovered portion is in the form of a self expanding spiral stent of zig-zag configuration.

10. (Currently Amended) A prosthesis for treatment of an aortic dissection comprising a substantially cylindrical body in an expanded state comprising at a proximal end thereof at least one self expanding stent covered by a bio-compatible graft material and an uncovered self expanding stent assembly extending from a distal end thereof wherein the uncovered self expanding stent assembly comprises self expanding stents linked together by links.

11. (Currently Amended) A prosthesis as in Claim 10 further including [Included] barbs extending from a stent at the proximal end through the graft material.

12. (Original) A prosthesis as in Claim 10 wherein the self expanding stent assembly extending from a distal end of the biocompatible graft material is formed from a biocompatible and biodegradable mesh material.

13 and 14. (Cancelled)

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15. (Original) A method of treatment of aortic dissection disease comprising the steps of

- a) loading a prosthesis onto a deployment device, the prosthesis comprising a plurality of self expanding stents together defining an elongate substantially cylindrical lumen wall engaging surface and at least one of the stents having a bio-compatible graft material cover, whereby the cover is adapted to close off a rupture in the wall of the lumen, the deployment device including means to retain a proximal end of the prosthesis in a retracted state and a trigger wire arrangement to release the proximal end of the prosthesis, a sheath to retain the entire the prosthesis in a retracted state and means to withdraw the sheath,
- b) endovascularly deploying the deployment device with the prosthesis loaded thereon to the site of the aortic dissection,
- c) checking by radiographic techniques that the covered stent or stents are at the site of the aortic dissection,
- d) withdrawing the sheath to expose the covered stent or stents of the prosthesis,
- e) releasing the proximal end of the prosthesis by means of releasing the trigger wire arrangement,
- f) withdrawing the sheath to deploy the other stents of the prosthesis along the wall of the lumen such that they provide pressure against the wall of the lumen, and
- g) withdrawing the deployment device.

16. (Original) A method of treatment of aortic dissection disease as in Claim 15 wherein the covered stent or stents are at the proximal end of the prosthesis.

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17. (New) A prosthesis comprising a covered portion defined by at least three self expanding stents within a tubular biocompatible graft material cover and an uncovered portion extending from one end of the covered portion, the uncovered portion being defined by a plurality of self expanding stents linked together by flexible links and defining an elongate substantially cylindrical lumen wall engaging surface.

18. (New) A prosthesis as in Claim 17 wherein the tubular biocompatible graft material cover is stitched or otherwise fastened to the stents in the covered portion.

19. (New) A prosthesis as in Claim 17 wherein the flexible links comprise a thread or fibre threaded through bends of the stents.

20. (New) A prosthesis as in Claim 19 wherein the thread or fibre is connected to each bend by a knot selected from a half hitch, a thumb knot, two half hitches or a clove hitch.

21. (New) A prosthesis as in Claim 17 wherein one of the self expanding stents within a tubular biocompatible graft material cover includes barbs extending through the cover to engage with a wall of a lumen when deployed therein.

22. (New) A prosthesis as in Claim 17 wherein the stents of the plurality of stents in the covered portion are of the zig-zag type and are constructed from stainless steel or Nitinol and the stents of the uncovered portion comprise eight to ten zig-zag stents and are formed from stainless steel or Nitinol.

23. (New) A prosthesis as in Claim 17 wherein the uncovered portion is in the form of a self expanding spiral stent of zig-zag configuration.